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ABSTRACT

This report represents a summary of findings from a research project to determine the availability of data concerning occupationally oriented training and education programs. Part I describes the types of data available regarding education and training programs--what information about which programs and providers is available from what source. It is organized into three sections. The first provides an overview and summary of the formal databases managed by the Massachusetts Board of Regents of Higher Education, the State Department of Education, and Division of Employment Training, as well as brief descriptions of other sources of data. The second section lists the providers of occupationally related education or training and gives a cross-reference about the database(s) in which each type of provider is likely to appear. The third section answers questions that policy makers, planners, and consumers might ask about occupational training and education and describes what information is available and where. Part II looks at dissemination--who uses the data and in what form(s) they are available. Each major agency that provides data is described. The report concludes with suggestions and questions that would need to be answered if there were widespread interest in increasing the coordinated use of this information. Recommendations are made for such coordination. (YLB)

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Massachusetts State Council
on Vocational Education

1991

COORDINATED INFORMATION SHARING

Improving the Delivery and Quality of Massachusetts Job-Related Education and Training Through Integrated Data Bases

U.S. DEPARTMENT OF EDUCATION
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**This report was in its final stages when the reorganization of Higher Education occurred. All references to the Board of Regents are now incorrect, since the Board has been replaced by the Higher Education Coordinating Council. This organizational changes does not affect the report's substantive information.*

This report, as prepared under the requirements of Section 112 of the Carl D. Perkins Vocational Education Act of 1984, Public Law 98-524, has been duly submitted as required to the U.S. Secretary of Education.

INTRODUCTION

Since the middle 1980's, a number of reports have called for greater information sharing as a means of coordinating the often bewildering array of education and training programs in Massachusetts (e.g., CLEECC 1987 report previous SCOVE reports, and Representative Kenneth Lemanski's initiatives).

More recently, in its June 19, 1990, memorandum to the prior administration, the State Council on Vocational Education advocated the establishment of an integrated data base of job-related training and education programs in the Commonwealth. During the summer of 1990, representatives from the State Council, the Board of Regents of Higher Education (BOR), the Department of Education (DOE) and the Division of Employment Training (DET) met to explore what kinds of information could and should be made more readily available.

As a follow-up to that meeting, and in keeping with the State Council's federal mandate to report on the coordination between vocational education and the employment training system, this research project was conducted. Its primary goals were to make a precise determination of what data concerning occupationally oriented training and education programs are available at the Department of Education, the Board of Regents of Higher Education, and the Department of Employment and Training and to whom that information is disseminated. The research consisted of interviewing key people in these agencies and examining samples of available data. The State Council wishes to thank staff of all three agencies for their quick, courteous and friendly cooperation. Please note that the focus of this research was on the availability of data in these categories. No attempt has been made to compile or evaluate the data. Furthermore, the research does not include all potential sources of

The State Council's primary research goals were to determine what data concerning occupationally oriented training and education programs are available.

employment-related training. The researcher did not contact or collect data from, for instance, the Department of Welfare for its programs under the new Family Support Act or from state-funded programs operated by the Executive Office of Communities and Development.

This report represents a summary of those findings, presented in two parts. The first describes the types of data available regarding education and training programs -- what information about which programs and providers is available from what source. Part II looks at dissemination -- who uses the data and in what form(s) they are available. The report concludes with a brief look at what steps might be taken if there were a widespread interest in increasing the coordinated use of this information.

PART I:
WHAT DATA ARE AVAILABLE REGARDING OCCUPATIONALLY RELATED EDUCATION AND TRAINING IN THE COMMONWEALTH?

The answer to the question in the heading is not a simple one. There is no one data base that comprehensively addresses the State's needs. Instead there is a patchwork of data bases and other sources, each having their strengths and weaknesses. Some can provide good information about programs in community colleges, but nothing on secondary schools. Others have data on enrollment demographics, but nothing on graduation rates or placement outcomes.

To guide the reader through the various forms of data collections available, this part of the report is organized into three sections. The first section provides an overview and summary of the formal data bases managed by the Board of Regents of Higher Education (BOR), the Department of Education (DOE) and the Division of Employment Training (DET), as well as brief descriptions of other sources of data referred to in the study. The second section lists the providers of occupationally related education or training, and gives a snapshot cross reference about the data base (s) in which each type of provider is likely to appear.

There is a patchwork of data bases and other sources in the Commonwealth, each having their strengths and weaknesses.

The third section of Part I walks, step by step, through questions that policy makers, planners, and consumers might want to know about occupational training and education and describes what information is available and where.

A. SOURCES AND COMPILATIONS OF DATA

This list includes data that are maintained by staff members at the DET, BOR, or DOE, as well as data to which they have access and knowledge. This list is not exhaustive, especially with respect to the non-computerized sources.

A concept that may be helpful in understanding the information that follows, especially regarding the computerized data bases, is the Classification of Instructional Programs (CIP) code. This standard classification defines instructional program areas broadly when reported out at the 2-digit level, or very precisely, when reported at the 6-digit level. For instance, code 12 refers to "consumer, personal, and misc. services" while the 6-digit code 120403 refers to specific programs in cosmetology. Similarly, code 15 refers to all of Engineering and Engineering Related Technologies, while 150303 is the code for the program someone takes in electronics technology.

The CIP code is not to be confused with occupational codes, which classify jobs rather than instructional programs. Several classification systems are in use, including the Dictionary of Occupational Titles (DOT), the Occupational Employment Statistics (OES), the Standard Occupation Classification (SOC) and the Standard Industry Code (SIC). To illustrate the complexity resulting from diverse classification systems, a student might complete an instructional program in industrial sales (CIP code 180702). She might then be prepared for a job as a sales engineer of mechanical equipment which has a DOT code of 007.151-010, a SOC code of 4210, and an OES code of 21008. She might also seek work as a manager of customer service or a sales agent, for example, each of which has its own set of DOT, OES and SOC codes. Since this paper focuses on the coordination of instructional programs, the only code to be used regularly will be the CIP code. The difficulties in "crosswalking" between and among these systems will be addressed briefly below in the section on labor market forecasts.

1.) Computerized Data Bases

VEDS -- Vocational Education Data System. This data base is compiled and maintained by the Department of Education (DOE) and was formerly called VEDS. Inasmuch as the DOE does not use a replacement name, and most people in the employment/training and education fields will recognize it, VEDS is the name that will be used in this report. VEDS mostly focuses on secondary school programs in the Division of Occupational Education. The data base includes Chapter 74 programs at the secondary or postsecondary level offered through public schools; non-Chapter 74 career programs offered in comprehensive high schools if they meet at least 10 periods a week; and community college career programs. (If a program is designated a Chapter 74 program, it has met the standards for a vocational program that are established by the state. Once these standards are met, the program receives extra weight in the state's funding formula per full-time equivalent enrollment.) Data collected include enrollment -- demographics, limited English proficiency, handicapped status -- as well as graduation figures for Chapter 74 and community college programs.

The VEDS data base mostly focuses on secondary school programs in the Division of Occupational Education.

Chapter 74 programs also have data from one-year follow-up reports on graduates.

In addition, the DOE separately collects data -- primarily enrollments -- on federally funded programs under the Perkins Vocational Education Act. The DOE also has just initiated an adult training data base, focusing on training programs of 100 hours or more that serve adults. This will include certain apprenticeship programs or JTPA programs, if they are offered at public vocational schools. Data collected on adult training programs include type of program, overall enrollments, and economic disadvantaged status of enrollees.

IPEDS – Integrated Postsecondary Education Data System. Compiled by the Board of Regents (BOR), this includes both public and private postsecondary education and replaced the Higher Education General Information Survey. Data on enrollments and on degrees conferred are available dating back to 1978. These data are reported to the National Center for Educational Statistics using the 6-digit Classification of Instructional Program (CIP) codes for degrees conferred; enrollment is reported at the 2-digit level. (Using 6-digit CIP codes means the data is reported with a high degree of specificity about the individual programs, whereas 2-digit codes only identify the broad instructional areas.) Although the more specific data codes are sent to the National Center, only the less specific, 2-digit coded data are made available to Massachusetts policy makers. The IPEDS data base includes information about ethnic and gender distribution; degree areas; public vs. independent enrollments; and two-year, four-year, and university enrollments.

RPEDS -- Research and Planning Enrollment and Degrees System. Maintained by the BOR, RPEDS exclusively focuses on public higher education, with data collected since 1984. Because it includes a broad spectrum of information based on unit records for every student enrolled in public higher education in Massachusetts, it is a richer, more in-depth compilation of information than IPEDS. It includes data on programs, credits, courses taken (with student grades omitted). RPEDS has dozens of variables, but only a subset is rigorously checked for accuracy. This subset focuses principally on full-time equivalent enrollments, credits, gender, race, age, and program enrollment. These enrollment data are augmented by the Admissions Monitor System, which includes high school rank and scores on the Scholastic Aptitude Test for every student who applied to a public four-year institution. (It does not include community colleges.)

In 1987, the BOR added data on degrees conferred at all of the 29 public institutions of higher education and in 1988, data from the Division of Continuing Education were added to the system.

2.) Private Vendor Data Bases

These are available for advising potential consumers about what programs are being offered where. The most common of these are the Guidance Information System (GIS) and CHOICES, both widely subscribed to by school guidance counselors who use them for young people who are interested in going to college. They primarily focus on baccalaureate and other forms of higher education. In addition, since the data bases are not owned or maintained by state agencies, there are more substantial costs involved for the school or agency using them. Students interested in information about colleges can also use similar non-computerized sources which include a variety of hard-copy publications about colleges.

STI would be the first data base in the State that could provide answers to questions such as, "Who prepares electronics technicians in Massachusetts?"

STI – Skills Training Inventory. Still not fully operational, this data system is under development by DET as part of their role as the State Occupational Information Coordinating Committee (SOICC). This data collection effort is part of a national plan coordinated through each state's SOICC, and matches efforts that are in place, or being put into place, in other states. STI, if it is made fully operational, will be comprehensive and would be the first data base that could provide answers to questions such as, "Who prepares electronics technicians in Massachusetts?" STI would draw on all the above-mentioned sources -- RPEDS, IPEDS, and VEDS -- and would be supplemented by in-depth surveys of hospitals, hand coding of proprietary schools, and various boards of registration (cosmetology, for example). It would not include on-the-job training or JTPA sponsored programs unless they showed up in one of the other data bases, as might a JTPA-sponsored program at a community college. STI would be, according to DET sources, better than the vendor software, free to clients in the state, more frequently updated, and better at reporting community colleges and secondary vocational offerings than vendor

software. STI is currently being piloted in several libraries around the state and DET hopes to have a completed and de-bugged system available in local DET offices by the summer of 1992.

JTPA MIS – The Job Training Partnership Act Management Information System. Maintained by DET as part of its oversight role in the Job Training Partnership Act (JTPA) system, this data base includes information on JTPA participants as well as on JTPA programs. Data collected on the individual enrollees include the typical demographics of sex, age, and ethnic group, as well as handicapped or limited English proficiency, and labor force and public assistance status. Data maintained on programs include funding source, provider, and type of program (basic education, skill training, on-the-job training, etc.)

In addition to tracking JTPA information, the data base includes certain programs funded by the Department of Public Welfare and administered through the Service Delivery Areas (SDAs).

TED -- Training and Employment Directory. This consists of data on training opportunities collected by local DET offices which, along with listings of job opportunities, gets put into locally maintained databases. TED is not systematically linked or available state-wide, and the data bases are usually more up-to-date on job opportunities than they are on training and education.

3.) Non-Computerized Sources

Department of Education Site Visits and Five-Year Evaluations. The DOE conducts brief site visits for Perkins-funded programs as well as comprehensive visits for Chapter 74 programs. In the case of the latter, visiting committees review each school system every five years, examining the curriculum, equipment, etc. of each Chapter 74 program, as well as analyzing outcome and placement reports. These reviews are available in hard copy, and are not computerized.

Division of Apprentice Training. The Division keeps manual records on the approximately 2800 apprentice programs (serving approximately 7000 students) which it oversees. It collects data on total numbers of apprentices per program (broken out by gender and ethnic background), ratios of apprentices to journeypersons for each employer involved, and wages. It also monitors individual apprentice progress through use of a Program Master Record Card, which reports time spent by each apprentice in learning and practicing various program-related skills. The Division is in the process of converting the manual records to a computerized data base, a process staff hopes to have completed within a year. Programs are classified according to Dictionary of Occupational Titles 9-digit codes.

Department of Education's Bureau of Postsecondary Vocational-Technical Programs -- Office of Private Schools. The bureau licenses approximately 120 "proprietary" schools. They maintain hand (not computerized) records of enrollment data, which are updated every two years at license renewal. These data include aggregated enrollment by course, numbers of dropouts, numbers graduated, and numbers placed. The DET also periodically maintains a hard-copy directory of licensed programs throughout the state.

4.) Other Sources

The research done on other potential sources has not been exhaustive. The focus has been on what is available on a statewide basis through the three major sources at the DET, BOR and DOE. Further information about programs could be obtained directly, for example, from Service Delivery Area (SDA) reports, or from campus information that does not get reported to any state agency. However, except as noted above in the JTPA Management

Information System, this information would not be aggregated on a statewide (or even regional) level and is not readily accessible.

B. DATA BASES CROSS-REFERENCED BY PROVIDERS

As previous reports by SCOVE and others have noted, the providers of education and training related to job preparation are very diverse. A person might get training to become an electronics technician, for instance, at a public or private institution of higher education, at a secondary vocational school, at a community-based organization, a skills center run by a Service Delivery Area through JTPA, on the job in industry, and so forth. The following list of possible providers is cross-referenced using the acronyms of the data bases previously listed to indicate where information on their programs may be found.

- Public institutions of higher education, particularly community colleges -- RPEDS, IPEDS; information on career programs in community colleges in VEDS
- Private institutions of higher education -- IPEDS
- Public vocational schools -- VEDS
- Public comprehensive high schools Chapter 74 programs -- VEDS
- Public comprehensive highs schools career programs of more than 10 periods a week -- VEDS
- Proprietary schools -- Licensing and Registration boards
- Community-based organizations -- little information

- Non-school settings (e.g., hospitals running emergency medical technician programs) -- currently some information is available through certification accrediting boards; the STI program under development at DET will have this information.

- Service Delivery Area providers (for JTPA) -- JTPA Management Information System

- Employer or on-the-job education -- little information, unless they are part of a formal apprentice program monitored by the Division of Apprentice Training or have received workplace education funds from JTPA.

C. RESPONSES TO SPECIFIC QUESTIONS

What follows is another approach to the data, this time organized around nine specific questions that policy makers, planners, consumers and others might want to know about occupational training and education.

No one system is is place to answer a simple question on where in Massachusetts an individual can get training for a particular job.

1.) What specific job-related training and education programs exist and who offers them?

As noted above, no one system is in place to answer a simple question about where in Massachusetts an individual can get training for a particular job. To continue the example cited earlier, if one wanted to know what electronics technician programs exist in the Commonwealth, one would need to consult RPEDS for the community colleges (and whatever few associate degree programs might be offered at the four-year public institution); IPEDS for private higher education; and

VEDS for secondary, postsecondary and community college programs. Some of the electronics technician programs offered in proprietary schools might show up under licensing, but very little information is available about them. Ongoing programs offered through the JTPA system would be tracked in DET's JTPA Management Information System. (Note that when it is fully operational, most of the above will be found in the Skills Training Inventory (STI) under development at DET.)

One would have to ask the individual SDAs for Job Training Partnership Act program information. The exceptions to this would be programs that were run through a public institution and were of long enough duration to make it into their reporting stream. Finally, although studies on the national level have pointed to extensive programs of on-the- job training and other instruction in business and industry, comparable programs in Massachusetts would not show up on any of the databases mentioned.

Two kinds of data might be of interest here -- who is in the pipeline (enrollees) and also who graduates. RPEDS and IPEDS report who is currently enrolled as well as numbers of graduates. RPEDS has available enrollments and degrees in the public sector at the 6-digit level of specificity, but the information is rarely released at that level. IPEDS, on the other hand, reports degrees at the 6-digit level primarily to the National Center of Education Statistics, and enrollment only at the broader 2-digit level. VEDS has enrollment information on all its programs, and currently maintains information on graduates from all Chapter 74 programs (the DOE plans to begin collecting graduation data on non-Chapter 74 programs as well).

2.) Who is eligible for the programs and who is being served (demographic information)?

Most of the data bases will offer enrollee demographics broken out by race, ethnicity, gender. The Vocational Education data also includes whether enrollees are considered limited English proficiency, handicapped, or disadvantaged. The JTPA

Management Information System also tracks workforce and public assistance status.

Less information is available about income levels or eligibility requirements, if any. At the DOE, an equity unit deals with questions of admission; at other agencies, questions about admissions would have to be referred to individual institutions.

3.) Who funds the programs and under what sort of control do they operate?

No systematic answer to this question is available. The paucity of information on who funds and oversees occupationally related education and training highlights the hit-or-miss nature of the data systems in place. For instance, JTPA programs, or a variety of state-funded training programs do not normally show up in any of the databases researched for this report (other than the JTPA Management Information System). What does show up depends on the type of program and who funds it. RPEDS, compiled by the BOR, mostly keeps track of programs funded by the state. (However, it has also included since 1988 the Division of Continuing Education, which is not state-supported and relies entirely on tuition and fees.) Programs supported by local school districts may show up in VEDS only if they are eligible for reimbursement under Chapter 74 or are non-Chapter 74 programs that meet the Chapter 74 ten period minimum requirement.

The paucity of information on who funds and oversees occupationally related education and training highlights the hit-or-miss nature of the data systems in place.

4.) What kinds of curricula are utilized? Do any programs use competency-based education and is there any integration of academics?

Very little information is available in response to this question. Information about curricula is not collected, according to DET. The DOE does not collect and code

curricula data as part of the data bases, but the information does exist in their site visit and evaluation reports. In addition, the new Perkins legislation now requires a local plan to include information about all the occupational programs in school districts or community colleges receiving Perkins funding. Data will include information about the curricula, the use of competency-based instruction, etc. Virtually all of the community colleges and about a third of all the secondary schools in the state need to submit this information as Perkins recipients. For the BOR, questions about specific course curricula would have to be referred back to the individual campuses; however, RPEDS is capable of providing program and course matrices for the public higher education system.

5.) What kinds of labor market demands exist for the specific occupational training programs offered?

Staff at the DET noted the difficulty of "crosswalking" categories from different databases because occupational projection systems use "different language" than the CIP coding system in place for describing instructional programs. Since there are not one but three common codes for occupations (see pages 4-5 for a listing of the array of possible occupational codes), there are so many possible ways to try to crosswalk between and among them that the National Occupational Information Coordinating Committee has established a crosswalking clearinghouse accessible to all states. This clearinghouse attempts to facilitate the inter-relating of instructional programs with occupation information.

Presently, the DOE creates a state labor market demand list requiring less than a baccalaureate degree for entry from information provided by DET; those occupations without career ladders or adequate pay scales are edited out and then the DOE uses the data for determining allowable Chapter 74 and Perkins-funded programs. In their view, further work on the currency and accuracy of labor market demands is a task for the Massachusetts Occupational Information Coordinating Committee (based at DET) in cooperation with State agencies, service providers, and REBs.

The BOR does not produce labor market studies but noted that with the data provided by DET, one could put together occupational demand and supply of training and instruction as part of a regionalization plan.

6.) Are there formal mechanisms for private sector input?

Very little information is available on this. Although there is substantial private sector involvement in the JTPA programs, most notably the REBs/PICs, the JTPA database only keeps track of private sector input for a small subset of programs – those funded with so-called "8 percent money" for which there are private sector matching contributions.

Program level advisory committees are another formal way of including private sector input. However, although the DET noted that successful advisory boards should help with job market information, there is no tracking of private sector input into these programs.

The DOE system keeps track of whether Chapter 74 programs have formulated mandated advisory committees, and will soon offer information on committee members, but beyond that has no reports on private sector participation. Records of whether advisory committees met would show up in DOE program evaluation reports. In a related activity, the DOE has nearly completed putting together a statewide list of Advisory Committees.

At the BOR, it was noted that advisory committees are needed in many programs for external accreditation, but their work is not tracked or monitored in their data bases.

7.) Is information available on program outcomes, such as completion rates and placement rates?

Because a few of the data bases include enrollments as well as graduates, it is possible to compare and develop a completion rate, but this is rarely done. Two of the data bases collect follow-up data on job placements and wage rates: the DOE for Chapter 74 programs and the JTPA Management Information System for adults enrolled in long-term skill training programs (Title II A programs).

With its Chapter 74 data, the DOE could calculate the percentage of graduates for each of the Classification of Instructional Program (CIP) codes, but, reportedly, no one has ever asked. However, the DOE does provide one of the few outcomes oriented reports in the state. It tracks and calculates "positive outcome" rates for the Chapter 74 programs. Based on the one-year follow-up reports sent by the institutions, the DOE calculates the percentages of graduates who are employed in a related field, in the military, or pursuing further education. These calculations are reported back to each local or regional school district by program and also aggregated state-wide by CIP code. Districts can then see how graduates of particular programs are doing, compared to those in other occupational programs in the district, and compared to people finishing the same program throughout the state.

In addition to the outcomes described in the previous paragraph, the follow-up data the DOE collects on Chapter 74 also includes average salaries for males/females. Under the new Perkins legislation, standards and measures of student achievement are required. The State must also choose from among additional standards, such as grade promotion and dropout reduction.

The JTPA Management Information System surveys all enrollees in the designated adult programs (whether they completed the programs or withdrew for any reason) 13 weeks after the conclusion of the programs. Data collected included wages if

participants entered employment, and how many weeks (of the 13) they worked. In addition, after 52 weeks, DET staff use similar questions on a follow-up sample. DET does not use this outcome data to make any individual program or provider comparisons, although it theoretically could. Instead, it reports these data aggregated at the SDA level, leaving any analyses at the provider or program level to be done by each SDA. DET also puts together an annual report that looks at outcomes for combined skill areas. For example, staff will combine all programs that offer training in related areas such as secretarial studies, word processing, and clerical work, and generate a report that looks at how the placement rates and wage rates compare to what had been planned and projected by these programs. These skill training area reports, organized by Standard Occupational Classification (SOC) codes, are aggregated for each SDA and for the entire state.

Under the new Perkins legislation, standards and measures of student achievement are required, and the State must choose from among additional standards, such as grade promotion and dropout reduction.

The National Center for Educational Statistics (which takes the public and private postsecondary IPEDS data) periodically conducts follow-ups with a sampling of its national data base to see what happens with graduates. However, the purpose is not to give feedback to the institutions and the data are not reported with institutional identifiers.

What is noticeably absent is any systematic information about what people who have finished occupational programs actually know or how well prepared they are to perform their jobs.

8.) Are there any other accountability systems in place that are required by accreditation or funders?

The JTPA system has in place a system of accountability built into its contracts with vendors, but this information is not reported out such that is readily accessible to others.

The BOR reports a varied picture on individual campus assessment practices. These range from job placement rates to employer satisfaction surveys, accrediting reports, faculty evaluations. However, they are neither reported nor collected in a systematic way, nor have the data gathered by individual schools on outcomes been examined for quality.

9.) Is there any data on articulation agreements or that tracks placements in higher education?

These appear to be few and far between, according to one respondent, and do not appear to be reported out in any of the data bases available.

PART II: DISSEMINATION

The first part of this report detailed the complexities and limitations of available data. This part takes a brief look at who uses the data. To whom is the data disseminated and in what form? Beyond the routine distribution, who requests data and for what purpose? These questions are addressed by looking at each major agency that provides data.

A. DEPARTMENT OF EDUCATION

The DOE uses its data for calculating allocations based on Perkins formulas and also to put together the state plan and performance reports. The equity unit at the Department uses data to compare program enrollments with total enrollments in school districts. A special education task force has also used the database in their research. In addition, the DOE uses the outcome data calculated from positive program outcomes (see item #7 above) in its planning and program approval process. Based on information from DET, the DOE creates a state demand list. Ordinarily, if a program is on the demand list, institutions wishing to offer programs in those areas get easier approval. However, if a program area on the demand list has a low wage rate, no career ladder, or has shown up with low positive outcome rates in the DOE outcomes study, institutions wishing to run such a program have a harder time. Although they can still obtain approval, they need to justify more explicitly in what ways they think their graduates will be able to benefit despite negative statewide data.

As noted before, the outcomes study calculations are also sent to superintendents to provide feedback on their programs and assist in their own planning processes. In another type of dissemination, the DOE also puts out a listing of programs without enrollment figures, which tells what each school teaches and includes an index by instructional program area. The primary users are prospective students, their parents, guidance counselors and sometimes Special Education directors seeking appropriate placements.

Other agencies like the DET might ask for information on programs in a certain area. Even though there is no formal linkage between program supply and occupational demand, DET might, for instance, ask what programs are available in high technology fields.

The DOE frequently receives very specific requests for data, e.g., how many enrollments there are in agricultural training throughout the state. Other requests come from graduate students, from salesmen interested in marketing a product, and from colleges interested in offering programs for teachers.

Finally, enrollment data are aggregated on a statewide basis and reported back to the Federal government as required for Perkins Act compliance. Until now these reports have not required placement or outcome data; it is expected with the changes in the Perkins legislation that in the future these will be reported as well.

B. DEPARTMENT OF EMPLOYMENT AND TRAINING

TED, the locally collected and maintained Training and Employment Directory is available in DET offices and accessible to clients.

Information is also reported to the Massachusetts Occupational Information Coordinating Committee, which is housed at DET

and includes representatives from JTPA, DET, Massachusetts Rehabilitation, the Division of Occupational Education of the DOE, institutions of higher education, and the Higher Education Information Center. A key project of MOICC has been the Skills Training Inventory STI.

The DET gets requests from DOE (for labor market information), school planners, career information projects, the unemployed, and a wide array of clients considering employment or career changes.

Information generated in the JTPA Management Information System is for the most part only used within DET and by the SDAs. It is available to others on request and at some points has been routinely exchanged with other agencies, such as the Department of Public Welfare.

C. BOARD OF REGENTS OF HIGHER EDUCATION (HIGHER EDUCATION COORDINATING COMMITTEE)

The Board of Regents provides a summary of some of the information available in IPEDS. This document goes out to the 123 participating public and private institutions in hard copy. The BOR also publishes RPEDS reports on enrollments and degrees conferred to all public higher education institutions. Other RPEDS information is made available upon request.

The BOR also provides data to people who need special reports. Some examples include Army and Navy recruiters; companies considering moving into the state who wish to assess the size of a trained pool of workers; companies interested in planning training for expanding needs; and companies and other institutions seeking to meet affirmative action targets. Requests for data also come in from other state agencies. For example, the Department of Mental Health might be interested in

knowing the numbers of mental health workers in the education pipeline. Members of the House and Senate are frequently interested in knowing numbers of students by constituencies or by campuses.

Data are also used in the process of establishing new programs. Institutions planning a particular program might request information on what other institutions are already offering it; staff from the BOR's own Academic Affairs office would want similar information as part of its internal review process. These special requests would be met with hard copy.

CONCLUSION

The report until now has painted a picture of a patchwork collection of data bases, which, when taken together, can answer certain (but not all) of the questions consumers, planners, and policy-makers might have. This report concludes with some suggestions and questions that would need to be answered if there were a desire to put together an integrated system aimed at greater accessibility, accountability, and comparability of programs.

Do more with what is already collected. Each of the agencies questioned indicated that more could be done with the data they already gather. With RPEDS, the BOR staff noted that they could focus more on other aspects of the database. There are many identifiers that they do not attend to, as they must focus instead on using their limited resources to make sure that a smaller subset of the information collected is kept "clean" and functional. (Less than 20 percent of the staff they once had is currently maintaining the data base.) The DOE also noted that with more staff they could do more reports on data they have; in general all respondents echo the real limitations of maintaining and utilizing the data they already have due to staffing and budget issues. It is also critical that the data collection efforts in the state are not further reduced during the current round of fiscal austerity and reorganization.

Each agency is trying to collect more data in its own sphere and/or trying to do more with what it currently has.

Despite these limitations, and in the face of ever-decreasing resources, it is noteworthy that each of these three agencies is engaged in trying to collect more data in its own sphere and/or trying to do more with what it currently has. The DET is working on the Skills Training Inventory, a coordinated database with the potential to answer, in one

place, many of the questions about program offerings asked for this research. STI, for instance, could provide a comprehensive answer to the question asked earlier about where an individual might go to get instruction on becoming an electronics technician. However, STI would not have any kind of follow-up data about the program -- who enrolls, who graduates, and what a student has learned. The DET staff noted that, in terms of complex coordination of supply and demand, or any kind of compilation of outcome measures, "you can't run before you walk."

The BOR is also undertaking a promising project that will utilize more of the data they have. The Board's staff is beginning a study of attrition/retention throughout the public higher education system. By combining the Admissions Monitoring System and RPEDS, the BOR will track the fate of the 1987 freshman class and follow them through the system.

The DOE has undertaken to begin building a database in the important but under-reported area of adult training.

Streamline the exchange of information throughout the state. By agreeing to use the same CIP codes, agencies could conceivably work more closely together. Information sharing might be further streamlined by developing some mechanism to simplify the transfer of data. For instance, those at DET interested in IPEDS data collected by the Board of Regents note that it slows down the process when they need to wait for the BOR to off-load their main frame computers down to a format suitable for the DET's personal computers.

In addition, some of the information that is available does not get shared and utilized within the state as much as it could. For instance, 2-digit enrollment information and 6-digit graduation information for all Massachusetts colleges and universities is sent by the BOR to the National Center for Education Statistics, and the BOR has even better, more specific data (at the 6-digit level) for enrollments and graduates of public institutions. However, what gets utilized within the Commonwealth is mainly the less program-specific, 2-digit CIP level.

Plug the holes in the "system." Even if all the agencies trebled their staffs and did everything they possibly could with their data, and even if inter-agency coordination and data exchange reached new heights for cooperation and maximum efficiency, there would still be major gaps for three reasons:

- The "system" is not a system, but a patchwork enterprise in which no one entity is responsible for collecting and maintaining the kinds of data looked for in this research.

- The "system" does not systematically include information about important segments of employment training providers. For instance, unless they are offered through a vocational school or community college, most JTPA programs take place unnoticed outside of the JTPA MIS data base. On-the-job-training is even less likely to appear anywhere.

- The "system" does not ask important questions about occupationally oriented instructional programs. Noticeably absent, for instance, in the discussion of student outcomes is any systematic information about what people who have finished occupational programs actually know or how well prepared they are to perform their jobs. Similar gaps can be noted under virtually all of the nine questions that guided this research (e.g., who funds, what kinds of curricula are used, what kinds of labor market demands exist, etc.)

By agreeing to use the same CIP codes, agencies could conceivably work more closely together.

What are the preconditions for a truly coordinated, comprehensive data base? Aside from the usual obstacles that need to be overcome for any coordinated effort -- time, money, and turf (who would coordinate such a venture?) -- several specific questions would need to be answered:

1.) What should a "coordinated, comprehensive" data base look like? The State Council chose to inquire about the nine questions that shaped this report, but others may wish for different kinds of information.

2.) For what purposes would the data be analyzed? If a major interest is in comparing programs, a number of technical questions may arise. To mention a few:

- How do you establish the basic comparability of programs at different institutions, serving different populations? Programs may have the same CIP code and still be quite different.

- What should the key outcome measures be? Graduation rates and training-related job placements are relatively easy to calculate. What about educational or occupational skills acquired, wage levels, employer satisfaction, or how long a graduate keeps her job?

- Assuming the previous questions were satisfactorily resolved, how do you compare, for example, placement rates from different geographical areas, or from one year to the next with differing rates of unemployment or economic activity?

3.) Who would advocate for such a system? Some related questions:

- How will teachers and administrators of occupational programs respond to this initiative? Will this be seen as a threat to their jobs? or a challenge to the quality of the jobs they are doing?

- Who benefits from such a system, and how strong a constituency for change does this represent? An integrated system certainly offers the potential for policy makers and planners to share and develop in program

development in a different kind of way. But who is this constituency and where will it be heard? This is important since it is safe to assume some high levels of opposition to implementation of a coordinated data base, especially if people feel threatened by it.

What should a "coordinated, comprehensive" data base look like?

Next Steps

If there is interest in exploring the possibility of developing a coordinated data base in Massachusetts, a key next step would be to convene a meeting of interested educators, business leaders, agency heads, research directors, Mass Jobs Council and State Council of Vocational Education members. The agenda might be to use this report as a convening document, discuss the description of the data bases summarized in it, check for omissions, and then conduct a discussion based on the issues raised in the conclusion. This could be a first step toward thoughtful consideration of the development of an integrated data base for Massachusetts.

RECOMMENDATIONS OF THE MASSACHUSETTS STATE COUNCIL ON VOCATIONAL EDUCATION

The Council recommends:

1. The highest priority should be given to data collection, analysis, and dissemination. Effective and efficient planning and policy implementation is only possible with comprehensive and sophisticated data bases.

2. All programmatic and labor market data (institutional, agency, and private sector to the extent available) must be coordinated by a single office.

3. A specifically designated data office must have the authority to request unavailable data and to augment existing data bases. This office should also be the center for analyzing such questions as what makes a coordinated data base, the purpose for which data is collected and analyzed, and how an independent data system would effectively serve institutional and agency needs.

4. Both academic and occupational skill achievements are of equal importance to a high-quality work force. Multiple methods of measuring achievement in both areas must be developed and applied as recommended in the report, "America's Choice: High Skills or Low Wages?" Sophisticated achievement data is essential for effective education and training systems.

5. Standards for academic and occupational skill achievement should be recommended by a multi-sector board charged with the task of continual standard review. Recommendations of the board should consider national efforts to establish academic and occupational skill standards, as well as in-state standards and measures required for programs funded under the 1990 Perkins Vocational and Applied Technology Act. Data on standards must be continually and widely disseminated.

6. For purposes of policy planning and program development, the Council recommends clearly defining employment-related education and making the distinction, if any, between education and training.

7. In the short term, the Council supports expediting completion of the skills training inventory (STI) and urges extensive dissemination throughout the State.

8. The Department of Employment and Training should make widely accessible an annual summary of Job Training Partnership Act data as compiled by the Job Training Partnership Act Management Information System.

9. To implement, amend, or add to the above recommendations, the Council urges the convening of a coordinated Data Base Task Force of high-level representatives from government, business, and labor. It should be complemented by the work of the State Council on Vocational Education and the new Oversight and Results Committee of the Massachusetts Jobs Council. The task force should be created by executive order and have the imprimatur of both branches of the legislature.